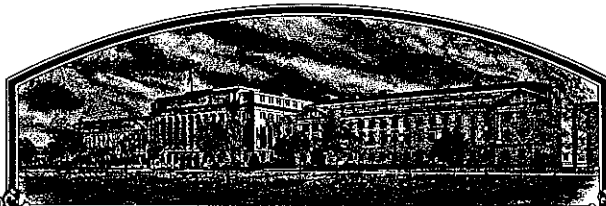


No.

8500027



THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

Nickerson American Plant Breeders, Inc.

Whereas, THERE HAS BEEN PRESENTED TO THE
Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED NOVEL VARIETY OF SEXUALLY REPRODUCED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF *eighteen* YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, OR IMPORTING IT, OR EXPORTING IT, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT. THE UNITED STATES SEED OF THIS VARIETY (1) SHALL BE SOLD BY VARIETY NAME ONLY AS SEEDS OF CERTIFIED SEED AND (2) SHALL CONFORM TO THE NUMBER OF GENERATIONS BY THE OWNER OF THE RIGHTS. (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

WHEAT

'Norseman'

In Testimony Whereof, I have hereunto set my hand and caused the seal of the Plant Variety Protection Office to be affixed at the City of Washington, D. C. this 19th day of February in the year of our Lord one thousand nine hundred and eighty-eight.

Attest:

Harveth Evans
Commissioner
Plant Variety Protection Office
Agricultural Marketing Service

Richard E. Lyng
Secretary of Agriculture

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE

APPROVAL EXPIRES 4-30-85

FORM APPROVED: OMB NO. 0581-0055

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

(Instructions on reverse)

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

1. NAME OF APPLICANT(S) Nickerson American Plant Breeders Inc.		2. TEMPORARY DESIGNATION HS78-1139		3. VARIETY NAME Norseman	
4. ADDRESS (Street and No. or R.F.D. No., City, State, and Zip Code) 5201 Johnson Drive, P.O. 2955 Mission, Kansas 66201		5. PHONE (Include area code) 913-384-4940 (KS) 303-532-3721 (CO)		FOR OFFICIAL USE ONLY PVPO NUMBER 8500027	
6. GENUS AND SPECIES NAME Triticum aestivum L.		7. FAMILY NAME (Botanical) Gramineae		FILING DATE 12/10/84 TIME 2:30 <input type="checkbox"/> A.M. <input checked="" type="checkbox"/> P.M.	
8. KIND NAME Hard Red Spring Wheat		9. DATE OF DETERMINATION 1) Spring of 1978 2) Spring of 1983		FEES RECEIVED AMOUNT FOR FILING \$ 1,800 DATE 12/11/84 AMOUNT FOR CERTIFICATE \$ 200.00 DATE December 21, 1987	
10. IF THE APPLICANT NAMED IS NOT A "PERSON," GIVE FORM OF ORGANIZATION (Corporation, partnership, association, etc.) Corporation				11. IF INCORPORATED, GIVE STATE OF INCORPORATION Delaware	
12. DATE OF INCORPORATION January 19, 1983					

13. NAME AND ADDRESS OF APPLICANT REPRESENTATIVE(S), IF ANY, TO SERVE IN THIS APPLICATION AND RECEIVE ALL PAPERS
 R.E. HEINER or C. Bruns
 G.E. Dixon or C. Bruns
 P.O. Box 2955 OR P.O. Box 30
 Mission, KS 66201 Berthoud, CO 80513
 PHONE (Include area code): 913-384-4940 (KS)
 303-532-3721 (CO)

14. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED

a. ☒ Exhibit A, Origin and Breeding History of the Variety (See Section 52 of the Plant Variety Protection Act.)

b. ☒ Exhibit B, Novelty Statement.

c. ☒ Exhibit C, Objective Description of Variety (Request form from Plant Variety Protection Office.)

d. ☒ Exhibit D, Additional Description of Variety.

e. ☒ Exhibit E, Statement of the Basis of Applicant's Ownership.

f. ☒ Exhibit F, Quality and Statistical Data

15. DOES THE APPLICANT(S) SPECIFY THAT SEED OF THIS VARIETY BE SOLD BY VARIETY NAME ONLY AS A CLASS OF CERTIFIED SEED? (See Section 83(a) of the Plant Variety Protection Act.) ☒ Yes (If "Yes," answer items 16 and 17 below) ☐ No

16. DOES THE APPLICANT(S) SPECIFY THAT THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS? ☒ Yes ☐ No

17. IF "YES" TO ITEM 16, WHICH CLASSES OF PRODUCTION BEYOND BREEDER SEED? ☒ Foundation ☒ Registered ☒ Certified

18. DID THE APPLICANT(S) PREVIOUSLY FILE FOR PROTECTION OF THE VARIETY IN THE U.S.? ☐ Yes (If "Yes," give date) ☒ No

19. HAS THE VARIETY BEEN RELEASED, OFFERED FOR SALE, OR MARKETING IN THE U.S. OR OTHER COUNTRIES? ☐ Yes (If "Yes," give names of countries and dates) ☒ No

20. The applicant(s) declare(s) that a viable sample of basic seeds of this variety will be furnished with the application and will be replenished upon request in accordance with such regulations as may be applicable.

The undersigned applicant(s) is (are) the owner(s) of this sexually reproduced novel plant variety, and believe(s) that the variety is distinct, uniform, and stable as required in Section 41, and is entitled to protection under the provisions of Section 42 of the Plant Variety Protection Act.

Applicant(s) is (are) informed that false representation herein can jeopardize protection and result in penalties.

SIGNATURE OF APPLICANT Robert E Heiner	DATE 11-21-84
SIGNATURE OF APPLICANT G.E. Dixon	DATE 11-28-84

EXHIBIT A.

Origin and Breeding History of Norseman

Norseman originated from a breeding nursery in the Red River Valley during the 1977 season. It was derived from a single F3 plant selection from a composite of crosses containing primarily upper Midwest germplasm. The F4 generation of this selection was increased and bulked in an off-season nursery in New Zealand. This bulk was first entered into yield trials in 1978 under the experimental number HS78-1139. This line has been tested in the Red River Valley area from 1978 through 1984. It has been in widescale testing throughout the spring wheat region of the upper Midwest in 1983 and 1984.

Two hundred ninety-seven heads were pulled from the F8 generation of the original bulk in the 1981 season. These were grown in head-rows for initial purification at Berthoud, Colorado in 1982. Of these, 8 rows (2.6%) were discarded due to taller height and 5 rows (1.7%) were discarded due to earlier maturity. In the 1983 season, the remaining bulked head-rows were grown to produce the breeder seed lot.

Norseman is uniform and pure. Less than .5% of the plants have been rogued from the breeder seed field in 1983. Ninety-five percent of these rogued plants were three to five centimeters taller than Norseman. Less than .5% of these taller plants may be expected in subsequent generations.

EXHIBIT B
Novelty Statement

Norseman is most similar to the hard red spring wheat Marshall. However, Norseman can be distinguished on the following morphological characteristics:

- Norseman has an acuminate beak length (average 3.8 mm's long). Marshall has an acute beak length (average 1.5 mm's).
- Norseman has an oblique shoulder shape. Marshall has a square shoulder shape, (Marshall is Registered as having an elevated shoulder shape; Crop Science Vol. 23, Jan.-Feb. 1983).
- Norseman has longer awns than Marshall, (see Exhibit F., page 2).

FORM GR-470-6
(2-15-73)UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
GRAIN DIVISION
HYATTSVILLE, MARYLAND 20782EXHIBIT C
(Wheat)OBJECTIVE DESCRIPTION OF VARIETY
WHEAT (TRITICUM SPP.)

INSTRUCTIONS: See Reverse.

NAME OF APPLICANT(S)

Nickerson American Plant Breeders Inc.

ADDRESS (Street and No. or R.F.D. No., City, State, and ZIP Code)

5201 Johnson Drive, P.O. Box 2955
Mission, Kansas 66201

FOR OFFICIAL USE ONLY

PVPO NUMBER 8500027

VARIETY NAME OR TEMPORARY
DESIGNATIONPlace the appropriate number that describes the varietal character of this variety in the boxes below.
Place a zero in first box (e.g., 0 8 9 or 0 9) when number is either 99 or less or 9 or less.

1. KIND:

1 1 = COMMON 2 = DURUM 3 = EMMER 4 = SPELT 5 = POLISH 6 = POULARD 7 = CLUB

2. TYPE:

1 1 = SPRING 2 = WINTER 3 = OTHER (Specify) 2 1 = SOFT 3 = OTHER (Specify)
2 = HARD

2 1 = WHITE 2 = RED 3 = OTHER (Specify)

3. SEASON - NUMBER OF DAYS FROM [] TO:

0 5 5 FIRST FLOWERING planting 0 6 0 LAST FLOWERING

4. MATURITY (50% Flowering):

- - NO. OF DAYS EARLIER THAN EQUAL IN MATURITY TO MARSHALL 1 = ARTHUR 2 = SCOUT 3 = CHRIS
- - NO. OF DAYS LATER THAN -- 4 = LEMHI 5 = NUGAINES 6 = LEEDS
7 = Marshall

5. PLANT HEIGHT (From soil level to top of head): ** MIDWEST DATA

0 7 4 CM. HIGH
- - CM. TALLER THAN -- 1 = ARTHUR 2 = SCOUT 3 = CHRIS
0 3 CM. SHORTER THAN 7 4 = LEMHI 5 = NUGAINES 6 = LEEDS
7 = Marshall

6. PLANT COLOR AT BOOTING (See reverse):

2 *Blue-green head at anthesis
1 = YELLOW GREEN 2 = GREEN 3 = BLUE GREEN

7. ANTHUR COLOR:

1 1 = YELLOW 2 = PURPLE

8. STEM:

1 Anthocyanin: 1 = ABSENT 2 = PRESENT 2 Waxy bloom: 1 = ABSENT 2 = PRESENT

2 Hairiness of last internode of rachis: 1 = ABSENT 2 = PRESENT 1 Internodes: 1 = HOLLOW 2 = SOLID

0 4 NO. OF NODES (Originating from node above ground) 1 5 CM. INTERNODE LENGTH BETWEEN FLAG LEAF AND LEAF BELOW

9. AURICLES:

2 Anthocyanin: 1 = ABSENT 2 = PRESENT 2 Hairiness: 1 = ABSENT 2 = PRESENT

10. LEAF:

2 Flag leaf at booting stage: 1 = ERECT 2 = RECURVED 2 Flag leaf: 1 = NOT TWISTED 2 = TWISTED
3 = OTHER (Specify):

1 Hairs of first leaf sheath: 1 = ABSENT 2 = PRESENT 2 Waxy bloom of flag leaf sheath: 1 = ABSENT 2 = PRESENT

1 2 MM. LEAF WIDTH (First leaf below flag leaf) 2 2 CM. LEAF LENGTH (First leaf below flag leaf): 4

FORM GR-470-6 (REVERSE)

11. HEAD:

☐ 3 Density: 1 = LAX 2 = DENSE 3 = Middense average 41 mm's ☐ 1-2 Shape: 1 = TAPERING 2 = STRAP 3 = CLAVATE 4 = OTHER (Specify) tapering to strap

☐ 4 Awnedness: 1 = AWNLESS 2 = APICALLY AWNLETED 3 = AWNLETED 4 = AWNED

☐ 1 Color at maturity: 1 = WHITE 2 = YELLOW 3 = PINK 4 = RED 5 = BROWN 6 = BLACK 7 = OTHER (Specify): _____

☐ 7.5 CM. LENGTH ☐ 5.5 MM. WIDTH

12. GLUMES AT MATURITY:

☐ 2 Length: 1 = SHORT (CA. 7 mm.) 2 = MEDIUM (CA. 8 mm.) 3 = LONG (CA. 9 mm.) average 8.1 mm's ☐ 2 Width: 1 = NARROW (CA. 3 mm.) 2 = MEDIUM (CA. 3.5 mm.) 3 = WIDE (CA. 4 mm.) average 3.3 mm's

☐ 2 Shoulder shape: 1 = WANTING 2 = OBLIQUE 3 = ROUNDED 4 = SQUARE 5 = ELEVATED 6 = APICULATE ☐ 3 Beak: 1 = OBTUSE 2 = ACUTE 3 = ACUMINATE average 3.8 mm's

13. COLEOPTILE COLOR:

☐ 1 1 = WHITE 2 = RED 3 = PURPLE

14. SEEDLING ANTHOCYANIN:

☐ 1 1 = ABSENT 2 = PRESENT

15. JUVENILE PLANT GROWTH HABIT:

☐ 2 1 = PROSTRATE 2 = SEMI-ERECT 3 = ERECT

16. SEED:

☐ 1-3 Shape: 1 = OVATE 2 = OVAL 3 = ELLIPTICAL ovate to elliptical ☐ 1 Cheek: 1 = ROUNDED 2 = ANGULAR

☐ 2 Brush: 1 = SHORT 2 = ~~midlong~~ 3 = LONG ☐ 1 Brush: 1 = NOT COLLARED 2 = COLLARED

☐ 5 Phenol reaction (See instructions): 1 = IVORY 2 = FAWN 3 = LT. BROWN 4 = BROWN 5 = BLACK

☐ 3 Color: 1 = WHITE 2 = AMBER 3 = RED 4 = PURPLE 5 = OTHER (Specify) _____

☐ 5.8 MM. LENGTH ☐ 2.9 MM. WIDTH ☐ 3 3 GM. PER 1000 SEEDS

17. SEED CREASE:

☐ 1 Width: 1 = 60% OR LESS OF KERNEL 'WINOKA' 2 = 80% OR LESS OF KERNEL 'CHRIS' 3 = NEARLY AS WIDE AS KERNEL 'LEMHI' ☐ 1 Depth: 1 = 20% OR LESS OF KERNEL 'SCOUT' 2 = 35% OR LESS OF KERNEL 'CHRIS' 3 = 50% OR LESS OF KERNEL 'LEMHI'

18. DISEASE: (0 = Not Tested, 1 = Susceptible, 2 = Resistant) 3 = moderately susceptible 4 = moderately resistant

☐ 3 STEM RUST 15-TNM (Races) Puccinia ☐ 4 LEAF RUST (Races) field races ☐ 0 STRIPE RUST (Races) ☐ 0 LOOSE SMUT

☐ 0 graminis ☐ 0 (UN-17 & UN-2) ☐ 4 OTHER (Specify) septoria avenae blotch tan spot (Pyrenophora tritici-repentis)

☐ 0 POWDERY MILDEW ☐ 0 BUNT

19. INSECT: (0 = Not Tested, 1 = Susceptible, 2 = Resistant) 3 = moderately susceptible 4 = moderately resistant

☐ 0 SAWFLY ☐ 0 APHID (Bydv.) ☐ 0 GREEN BUG ☐ 0 CEREAL LEAF BEETLE

☐ 0 OTHER (Specify) _____ HESSIAN FLY RACES: ☐ 0 GP ☐ 0 A ☐ 0 B ☐ 0 C ☐ 0 D ☐ 0 E ☐ 0 F ☐ 0 G

20. INDICATE WHICH VARIETY MOST CLOSELY RESEMBLES THAT SUBMITTED:

CHARACTER	NAME OF VARIETY	CHARACTER	NAME OF VARIETY
Plant tillering	Marshall	Seed size	Marshall
Leaf size	Marshall	Seed shape	Marshall
Leaf color	Marshall	Coleoptile elongation	Marshall
Leaf carriage	Marshall	Seedling pigmentation	Marshall

INSTRUCTIONS

GENERAL: The following publications may be used as a reference aid for the standardization of terms and procedures for completing this form:

(a) L.T. Briggie and L. P. Reitz, 1963, Classification of Triticum Species and Wheat Varieties Grown in the United States, Technical Bulletin 1278, United States Department of Agriculture.

(b) W.E. Walls, 1965, A Standardized Phenol Method for Testing Wheat Seeds for Varietal Purity, contribution No. 28 to the handbook of seed testing prepared by the Association of Official Seed Analysts. (See attachment.)

LEAF COLOR: Nickerson's or any recognized color fan should be used to determine the leaf color of the described variety.

EXHIBIT D.

Additional Description of Norseman

Norseman is a hard red spring wheat developed by Nickerson American Plant Breeders Inc.. It was tested as the experimental number HS78-1139.

Norseman is a short height semidwarf variety similar in height to Marshall. Norseman has very good straw strength, midseason maturity and its milling and baking qualities are satisfactory.

Juvenile growth habit is semi-erect. Plant color at boot is green with a blue-green head color at anthesis. Flag leaf is twisted and recurved. Head shape is tapering to strap, mid-dense, awned and head color is white at maturity. Glumes are of medium length and width at maturity with oblique shoulders and acuminate beaks. Seed shape is ovate to elliptical with rounded cheeks. Seed crease is narrow and depth is shallow. Brush size is midlong to long.

Norseman is adapted to the northern spring wheat region of North Dakota, South Dakota and Minnesota.

Exhibit E.

Statement of the Basis of Applicant's Ownership

Nickerson American Plant Breeders Inc. is the applicant for protection in this case being:

- a) the incorporated business (registered in Delaware) for and within which regular employees have bred the named variety.
- b) the proprietary owner and intending commercial user of the variety.

EXHIBIT F.

Quality and Statistical Data

Quality data.....page 1

Statistical data Awn Length.....page 2

YEAR: 1984

Nickerson American Plant Breeders Inc.

HARD RED SPRING WHEAT QUALITY

PAGE 1

YEAR	SAMPLE NAME	LOC	WHEAT--FLOUR QUALITY										BAKING QUALITY										MILL SCORE	BAKE SCORE	TOTAL SCORE
			TEST WT.	PROT	WHT	FLR	YLD	FLR	PROT	ASH	MIX CURVE	ABS. %	MIX TIME	CHAR	VOL	CRUMB			COOL						
																GRN	TEX	R							
			lb/Bu	14%mb	%	14%mb	14%mb	14%mb	R	%	min	R	cc	R	R	R	R	R	R	R	R	R	R		
79	H578-1139	HU	59.2	15.5	70.9	14.5	0.434	5	65.0	2.8	6	1000+	5	5	7	93-B	77-C	160-B							
80	H578-1139	HU	59.5	14.5	75.0	12.3	0.461	7	62.0	3.0	8	950	7	8	9	87-B	93-B	170-B							
81	H578-1139	CR	56.8	13.6	68.2	12.7	0.477	7	64.0	3.3	8	950	7	9	8	73-C	86-B	153-C							
81	H578-1139	HU	59.4	15.4	71.3	14.5	0.511	8	66.0	2.5	8	960	7	8	9	88-B	96-B	172-B							
81	H578-1139	CY	58.5	13.1	69.8	11.8	0.416	6	63.0	3.0	9	940	7	9	9	71-C	85-B	156-C							
82	H578-1139	CR	60.2	14.1	70.2	13.4	0.433	5	64.0	2.3	9	950	7	8	9	80-B	90-B	160-B							
82	H578-1139	CY	60.9	14.0	70.9	12.1	0.427	5	62.0	3.3	9	960	8	9	9	76-C	86-B	162-B							
82	H578-1139	HU	59.1	14.7	68.1	12.7	0.382	4	62.0	3.0	8	950	8	9	9	74-C	81-B	155-C							
83	H578-1139	CX	59.3	14.4	72.6	13.2	0.478	5	62.0	2.3	8	820	8	7	8	83-B	72-C	155-C							
83	H578-1139	CY	56.4	14.5	71.7	13.7	0.467	5	62.0	2.3	9	875	9	8	9	80-B	78-C	158-C							
83	H578-1139	HU	50.5	16.1	66.6	15.5	0.462	6	64.0	3.3	8	960	8	8	9	67-D	87-B	154-C							
84	H578-1139	SP	61.7	14.2	72.6	13.2	0.364	6	65.0	2.8	8	930	8	8	9	96-B	86-B	172-B							
84	H578-1139	HU	59.4	14.3	71.7	13.1	0.486	5	64.0	2.3	8	960	8	8	9	81-B	80-B	161-B							
84	H578-1139	CY	61.0	14.3	72.1	13.2	0.388	5	64.0	1.8	8	940	8	8	9	83-B	78-C	161-B							
84	H578-1139	CY	59.7	13.8	71.2	12.6	0.407	7	65.0	2.3	8	850	8	8	8	83-B	81-B	164-B							
84	H578-1139	CX	61.5	13.6	69.4	12.6	0.347	6	64.0	3.0	8	930	8	9	8	77-C	86-B	163-B							
84	H578-1139	CX	61.3	13.9	68.3	12.6	0.377	5	63.0	3.8	8	900	8	9	9	73-C	87-B	160-B							
	AVERAGE		58.8	14.4	70.6	13.2	0.430	6	63.6	2.8	8	914	8	8	9	81-B	84-B	165-B							

GRADES:	A-EXCELLENT	B-GOOD	C-ACCEPTABLE	D-QUESTIONABLE	F-UNACCEPTABLE
R-RATINGS:	9-10=EXCELLENT	8=GOOD	7=ACCEPTABLE	5-6=QUESTIONABLE	1-4=UNACCEPTABLE

GRADES: A-EXCELLENT B-GOOD C-ACCEPTABLE D-QUESTIONABLE F-UNACCEPTABLE
 R-RATINGS: 9-10=EXCELLENT 8=GOOD 7=ACCEPTABLE 5-6=QUESTIONABLE 1-4=UNACCEPTABLE

Statistical Data Awn Length
Norseman VS. Marshall

<u>Source</u>	<u>df</u>	<u>ss</u>	<u>ms</u>
Total	49	22.91	
VAR	1	3.65	3.65**
Error	48	19.26	.40

F TEST = 9.125**

<u>Variety</u>	<u>Mean</u>
Norseman	6.06 cm's
Marshall	5.52 cm's

** The probability that there is a difference between the means is significant at the 1% level.